Effects of vitamin/mineral supplementation on the prevalence of histological dysplasia and early cancer of the esophagus and stomach: results from the General Population Trial in Linxian, China

Author: Wang GQ, Dawsey SM, Li JY, Taylor PR, et.al.

Journal: Cancer Epidemiol Biomarkers Prev 1994; 3(2):161-6

Abstract: A randomized nutrition intervention trial was conducted among 29,584 adult residents of Linxian, China, to examine the effects of vitamin/mineral supplementation on the occurrence of esophageal/gastric cardia cancer in this high-risk population. A fractional factorial study design allowed evaluations of four different combinations of nutrients: (A) retinol and zinc; (B) riboflavin and niacin; (C) vitamin C and molybdenum; and (D) beta-carotene, vitamin E, and selenium. During the 5.25-year intervention, significant reductions in total mortality, total cancer mortality, and stomach cancer mortality occurred among those receiving beta-carotene, vitamin E, and selenium. At the end of intervention, an endoscopic survey was carried out in a sample of subjects to see if the nutritional supplements had affected the prevalence of clinically silent precancerous lesions and early invasive cancers of the esophagus or stomach. Endoscopy was performed on 391 individuals from two study villages. The prevalences of esophageal and gastric dysplasia and cancer were compared by nutrient factor. Cancer or dysplasia was diagnosed in 15% of the participants. No statistically significant reductions in the prevalence of esophageal or gastric dysplasia or cancer were seen for any of the four vitamin/mineral combinations. The greatest reduction in risk (odds ratio, 0.38; P = 0.09) was seen for the effect of retinol and zinc on the prevalence of gastric cancer. Although no significant protective effects were seen in this endoscopic survey, there was a suggestion that supplementation with retinol and zinc may protect against the development of gastric neoplasia in this high-risk population. Additional studies with larger numbers of endpoints will be needed to further evaluate this possibility.